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Evolution of Fertility and configuration of Aeolian soils in the processes of shifting sand fixation in Tengger desert

Duan Zhenghu[*,**] **Xiao Honglang**[*] **Wang Gang**[**]

[*] *Shapotou Desert Experimental Research Station, Cold and Arid Regions Environmental and Engineering Research Institute, Chinese Academy of Sciences; 260 Donggang West Road, Lanzhou, 730000, P.R. of China; and* [**] *State Key Laboratory of Arid Agroecology, Lanzhou University, 298 Tianshui Road, Lanzhou, 730000, P.R. of China*

Abstract

With the succession from artificial plants to natural vegetation, the environment of soil formation, circulation of soil material were influenced in the processes of shifting sand fixation and the mean of soil particle size changed from 0.2 mm to 0.08-0.14 mm. The capacity of available soil water enlarges five times. Infiltration of soil water came to a close because of the increase of soil water capacity and the change of redistribution of soil water in profiles. Soil microorganisms grow out of nothing and evolved from simple to complex. Interaction of all mentioned-above processes obviously brought about accumulation of soil fertility, evolution of soil profiles and development of the profiles towards zonal characteristic. The difference of micro-topography is closely relative to redistribution of material and energy in the soil formation.